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ABSTRACT

This paper describes the design, implementation, and evaluation of a Deliberate Psychological Education Curriculum to promote the ego, moral, and conceptual development of inservice teachers enrolled in a five-week workshop, followed by a supervised fall quarter practicum. Significant differences were found between experimental and control groups on all three dimensions of personal/psychological growth as measured by the Loevinger Sentence Completion Test, the Rest Defining Issues Test, and the Hunt Paragraph Method Test. Experimental teachers' professional/skill development evidenced significant increases in levels of communication and indirect teaching. Analysis of journals, course evaluations, and teacher designed miniunits corroborated these gains. (Author)

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A Cognitive-Structural Approach to Adult Ego, Moral, and Conceptual Development Through Inservice Education

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The purpose of this study was to design, implement, and evaluate an inservice teacher education program for promoting positive movement through the cognitive-developmental stages of conceptual, psychological, and moral/ethical growth. It represents a second generation study on the growth of adult inservice teachers and builds upon pilot work with teachers (Bernier, 1976) and previous field-based curriculum projects with adolescents and college students (The Mosher-Sprinthall Deliberate Psychological Education Model).

This paper is divided into three major areas: (a) an overview of adult development as seen by cognitive-developmental theorists (b) an overview of the current issues in inservice teacher education and a rationale for adult psychological development as the aim of inservice teacher education and (c) the report of the design, curriculum, and results of a study to deliberately promote psychological growth of adult inservice teachers.

Adult Developmental Stages

A growing body of literature and research in adult development based on cognitive-developmental stage models indicates that while most adults seem to stabilize at certain conventional stages, characterized by fairly rigid, achievement oriented, conscientious patterns of thinking, it may be possible to directly intervene to promote positive stage growth to higher, more adequate, post conventional stages, exhibiting flexible, interpersonally oriented, autonomous thinking

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and behavior patterns, (Bernier, 1976; Chickering, 197 ; Lasker and Pinedo, 1976). Adulthood has been cited as the time to look closely at the role of personal, moral experiences in initiating positive stage growth (Kohlberg, 1973b). The necessary conditions to promote an upward shift to post conventional, principled moral thinking stages are hypothesized to be: (1) experiences of sustained responsibility for the welfare of others; (2) under conditions when the basis of the responsibility can be both questioned and affirmed on a universal human basis (Kohlberg, 1973b, p. 500). Adult inservice teachers, committed to the responsibility of educating new generations of citizens and wishing to participate in inservice training which aims for more personalized and humanistic goals for education seem to be an important group of adults to whom the theories and principles of cognitive developmental stage theory may be applied.

Developmental Stage Theories

Cognitive-developmental theories of growth are based on the assumption that human development results from changes in cognitive structures, which are the thinking patterns by which a person relates him/herself and his/her environment. The cognitive-developmental theories of Piaget, Kohlberg, Loevinger, and Harvey, Hunt and Schroder all posit a sequence of hierarchical, invariant, qualitatively different stages with the higher stages being more adequate in the sense that they include multiple points of view, ability for perspective taking, and greater complexity. These cognitive-developmental theorists provide a structural framework for observing thinking patterns: Piaget in cognitive processes, Kohlberg in moral reasoning processes, Loevinger in ego maturity processes, and Harvey, Hunt, and Schroder in conceptual processes.

Piaget: Cognitive Development. Piaget's theory of cognitive development is based on the assumption that "knowledge about reality is not attributable entirely to experience (the action of things upon us) but also to reason (our mental actions upon things)" (Elkind, p. 5, 1974). Thus, Piaget has been most concerned with how actions become translated into thought.

The core of cognitive-developmental stage position is the doctrine of cognitive stages, which, Piaget states, have the following general characteristics:

(1) Stages imply distinct or qualitative differences in modes of thinking or of solving the same problems.

(2) These form an invariant sequence; while cultural factors may speed up, slow down, or stop development, they do not change its sequence.

(3) Each stage forms a structural whole. It represents an underlying thought organization.

(4) Cognitive stages are hierarchical integrations. Stages form an order of increasingly differentiated and integrated structures to fulfill common functions. Higher stages reintegrate structures found at lower stages. (Piaget, 1960)

Researching thought patterns with children and adolescents, Piaget found four consistent systems within certain broad age ranges.

Stages of Cognitive Growth

Age	Stage
0-2	Sensori-motor
2-7	Intuitive or preoperational
7-11	Concrete operations
11-16	Formal operations

Piaget does not postulate adult cognitive stages but he does postulate continuing cognitive development through early adulthood: (a) from concrete operations continuing into the stage of formal operational thought for some "slower" developers, (b) for others, filling the horizontal decalage in formal thought, and (c) stabilization of formal thought which is shown by increased rejection of lower forms of thinking (Kohlberg, 1973b).

A growing body of research on young adults and college students indicates that, although they may have the ability for formal operational thought, many--

up to 50%--have not developed these logical, rational, abstract thinking processes as adolescents (Kohlberg & DeVries, 1971).

Kohlberg: Moral Development. Kohlberg, in his theory of moral development, had identified six stages of moral growth representing qualitatively different systems of thinking that people actually employ in dealing with moral questions. These stages of moral growth adhere to the characteristics of stages listed by Piaget in the previous paragraph and are, in fact, related to Piagetian cognitive stages as follows: a given logical Piagetian stage is a necessary, but not sufficient, condition for a parallel moral stage (Kohlberg, 1973b). For example, all Kohlberg's principled (post-conventional) thinkers at stages 5 and 6 are formal operational, but most formal operational people have not reached Kohlberg's principled stages 5 and 6. The following table suggests the parallel relations between Piaget and Kohlberg (Kohlberg, 1973b).

TABLE 1

Piaget Logical Stage	Kohlberg Moral Stage
Symbolic, intuitive thought	Stage 0: The good is what I want and like.
Concrete operations, Substage 1, categorical classification	Stage 1: punishment-obedience orientation
Concrete operations, Substage 2, reversible concrete thought	Stage 2: instrumental hedonism and concrete reciprocity
Formal operations, Substage 1, relations involving the inverse of the reciprocal	Stage 3: orientation to interpersonal relations of mutuality
Formal operations, Substage 2	Stage 4: maintenance of social order, fixed rules and authority
Formal operations, Substage 3	Stage 5A: Social contract, utilitarian lawmaking perspective
	Stage 5B: higher law and conscience orientation
	Stage 6: universal ethical principle orientation

Kohlberg (1973b) claims that an interactional or equilibration theory of the effects of experience on development can explain adult structural change. Stating that childhood structural changes cannot be completely distinguished from maturational stages, Kohlberg infers that until maturation is completed, it's impossible to disentangle the roles of maturation and experience in generating stage change. Consequently, he points to adulthood as the time to look closely at the role of experience in initiating positive stage growth.

Kohlberg (1973a) believes that fully principled thinking (stages 5 and 6) is usually not attainable until the late 20s. He proposed an additional stage 4½, described clearly in terms of a relativistic identity transition from his conventional to principled thinking; and this may be linked to the identity crisis described by the ego identity theorists Erikson, Marcia, and Chickering. The work of Podd (1969), Boyd (1973), and Beck, Sullivan, and Porter (1973) give support to the importance of successful resolution of the identity crisis as a necessary, but perhaps not sufficient, condition for movement into principled moral judgment. Both Podd and Boyd use Marcia's stages with college students. Podd found that students in Kohlberg's transitional stage (4½) also showed evidence of Marcia's moratorium phase, while students in stages 5 and 6 (Principled thinking) had <u>all</u> achieved Marcia's identity stage. On the other hand, not all of those who had achieved identity stages were principled thinkers. This supports the notion that achieving identity is necessary but not sufficient for principled moral thinkers. It also supports the notion of an empirical link between the functional task views of adult development, i.e., Erikson, and the structural stage view expressed by cognitive-developmental theorists, Kohlberg, Loevinger, and Hunt.

Kohlberg describes the differences in promoting children and adolescents to conventional thinking (stages 3 and 4) versus promoting premature young adults to principled thinking (stages 5 and 6). It is roletaking, perspective taking,

and discussion which promote vicarious symbolic experience and stage development to stages 3 and 4. This "widening role taking can go on without extensive personal experiences of responsibility and choice" (Kohlberg, 1973b, p. 194). Called stabilizing or filling out the decalage, many young adults never develop beyond these stages of conventional thinking. Kohlberg has found only 6% of sample populations are principled thinkers; none of his longitudinal subjects (all males) had reached stage 6 by 30 (Kohlberg, 1973b), and none had reached stage 5 before age 23 and relatively few had reached stage 5 before late 20s.

Kohlberg suggests that the necessary conditions to promote an upward shift to postconventional thinking are:

(a) experiences of sustained responsibility for the welfare of others,

(b) under conditions where the basis of this responsibility can both be questioned and affirmed on a universal human basis (Kohlberg, 1973a, p. 500).

Up to stage 4 a person develops through the stages by a wider and more adequate process of roletaking and understanding of the social system. But, to make the upward shift to postconventional thinking at stage 5, a person needs more than an adequate perception of what the social system requires. Where there is movement to principled thinking in college, it is in relation to anticipated commitment. Each person has the freedom to make his/her own choices and, consequently, seeks to determine the moral terms or contracts which are important in terms of future commitments (Kohlberg, 1973b). But the young adult's first experiences with initial commitment are not like the personal moral experiences of the adult who has "sustained responsibility for the welfare of others, and has experienced irreversible moral choices" (Kohlberg, 1973b, p. 196). Still, adult responsibilities in themselves are not sufficient to develop principled moral thinking. Most adults, in fact, stabilize at stages 3 and 4, the conventional levels.* Kohlberg suggests that for

*Carol Gulligan (1978) is currently investigating the possibility of women's stages of moral judgment as different from Kohlberg's stages.

some young adults their life experiences are the sources of moral reflection leading to principled levels of thought. Integration, combined with the personal experience of choice, questioning, commitment, and cognitive reflection all seem to be required to promote growth into stage 5 of principled moral thinking.

Loevinger: Ego Development. Loevinger, in her theory of ego development, has conceptualized seven sequential, invariantly ordered, hierarchical stages with three transitional stages. Assigning an ordinal value to each stage results in 10 points.

Ego Level	1	2	Delta	Delta/3	3	3/4	4	4/5	5	6
Ordinal Value	1	2	3	4	5	6	7	8	9	10

Each stage is more complex than the last and none can be skipped in the course of development. However, different individuals may stabilize at certain stages and consequently not develop beyond those stages. Among adults there can be found representatives of each stage who are then characterized in the terms of the features specific to the stage at which they stabilized.

The Washington University Sentence Completion (SC) Test of ego development is based on the assumption that each person has a core level of ego functioning (Loevinger, Wesler & Redmore, 1970). The purpose of the test is to determine this core level by assigning an ego level to a person based on the distribution of ratings of responses to the 36 sentence stems in the test.

Loevinger defines the essence of the ego: "the striving to master, to integrate, to make sense of experience is not one ego function among many but the essence of the ego" (Loevinger, 1969, p. 85). This definition of ego differs from prior psychoanalytic definitions in two ways: (1) conceptually, ego development is a sequence of steps along a continuum of differentiation and complexity... and (2) Loevinger's definition by design allows for systematic empirical research (Hauser, 1976). Loevinger claims a "unitary" nature of her scheme in describing the ego as providing the frame of reference that structures one's

world and within which one perceives the world. The ego is an "inner logic" which maintains its stability and identity and its structure by selective inattention to factors inconsistent with its current ego level (Loevinger, 1969).

Loevinger (1966) describes the defining characteristics of the successive stages of ego development in terms of impulse control, interpersonal style, conscious preoccupation and cognitive style. There are ten levels, seven original stages and three transitional stages.

The rationale, properties and complex scoring system have been carefully analyzed (Holt, 1974; Loevinger, 1972; Loevinger & Wessler, 1970; Loevinger, et al., 1970; Redmore & Waldman, 1975). Most recently Hauser (1976) reviewed all available literature and research on Loevinger's theory and assessment of ego as well as the evidence for reliability and validity of the test. There is very favorable reliability data for the test itself and for the scoring system.

Bernier (1976) in a developmental education pilot study found inservice teachers at a mean and mode ego level of 3/4; this conformist-conscientious transition stage has also been reported by other researchers to be the most predominant adult ego level (Hauser, 1976; Loevinger, 1976). The qualitative differences that distinquish transition stage 3/4 (conformist/conscientious) from the conformist and the conscientious stages are summarized by Hauser (1976) as follows:

> The stage 1-3 is the "conformist" one. Most people at some time during childhood or adolescence move to this stage. Rules are obeyed, in this stage, just because they are rules. Disapproval and shame for transgression of rules are important issues for the person functioning at this level. Interpersonal relations are seen in terms of actions and concrete events rather than feelings and motives. Conscious thoughts are with material things, status, reputation, and appearance. Where inner states are expressed, they are typically in terms of stereotypes, cliches, and moralistic judgments.
>
> At the transition between conformist and conscientious stages 1-3/4 there is the dawning acknowledgement that "right ways" may be relative to the context in which the person finds himself (Hoppe, 1972). The rightness of an action is now considered to be a function of the individual time and place. One sees an emergence of introspective capacities. At this stage is a beginning understanding of psychological causation, self-awareness, the outside social group no longer provides

absolute guidelines for the behavior of the 1-3/4 person. The contingencies recognized at this stage are usually global and banal. More subtle differentiation takes place at the later stages.

At this stage (1-4) morality has become internalized. This is the "conscientious" stage. Inner rules now take precedence over those generated and enforced by peer or authority pressures. The sanction for transgression is guilt. Interpersonal relations are seen in terms of feelings and motives rather than actions. Social interaction is experienced as more vivid and meaningful than in earlier stages. Individual differences are now perceived rather than the previous broad stereotypes. Conscious thoughts focus on obligations, ideals, traits, and achievement as gauged by inner standards rather than through external recognition. A capacity for self-criticism, lacking in the previous stages, characterizes this stage. (Hauser, 1976, p. 931)

It is the Individualistic and Autonomous Stages 4/5 and 5, however, that correspond to the advanced principled stages of Kohlberg's theory of moral reasoning and the higher, more complex, abstract stages of conceptual development described by Harvey, Hunt, and Schroder next in this paper. The advantage of promoting teachers' growth to these higher stages of ego development parallel the advantages discussed in the coming section on conceptual level. Briefly, the Individualistic Stage 4/5 and the Autonomous Stage 5 have the following characteristics.

The stage 1-4/5 is the third transitional one which has been delineated. The 1-4/5 subject tends to have more complex responses than subjects at the earlier developmental levels. People at this stage show the beginning of the ability to tolerate paradoxical relationships between events (Hoppe, 1972). This is in contrast to the earlier stages where individuals attempt to eliminate paradoxes by reducing them to polar opposites. More specifically, there is greater complexity in conceptualizing interpersonal interactions. In addition, interpersonal relations are highly valued, contrasting with the cherishing of ideals and achievements (1-4).

The stage 1-5 is the "autonomous" stage. The characteristic issue here concerns coping with inner conflict, conflicting needs, conflicts between needs and ideals, and conflicting perceptions. Although such conflicts are present in earlier stages, they are not so directly faced and coped with as in this period. Together with greater awareness of conflict comes increased toleration for the choices and solutions of others, rather than the moral condemnation found in earlier stages. Interpersonal relations are characterized by recognition of mutual interdependence as well as the other person's need for autonomy. The person at this stage sees the need for others to "learn from their own mistakes." Conscious thoughts frequently focus around themes touching on the complexity of options, role differentiation, individuality, and self-fulfillment. (Hauser, 1976, pp. 931-932)

These cognitive-developmental stage theories have strong implications for adult development within teacher education programs. The goals of such programs would be to deliberately promote ego maturity, principled moral/ethical reasoning, and increased conceptual complexity on the part of inservice or preservice teachers.

The data available on cognitive-structural stages in adulthood suggests that while there may not be stages exclusive to adults, few adults naturally progress to the higher developmental levels, thus indicating a need for systematic interventions which stimulate stage growth. The research connecting higher levels of conceptual development with more effective teaching are presented in the next section and leads the way for considering the aim of inservice education to be psychological development along the dimensions of ego, moral, and conceptual growth.

Harvey, Hunt, and Schroder: Conceptual Development. The hypothesis that teachers at higher conceptual levels may be more able to function with adaptive, flexible, stress tolerant, creative behavior has been supported by the works of O. J. Harvey, David Hunt, and Harold Schroder. In 1961, working together, they described a conceptual system as the framework through which a person relates to his/her experience. These systems may be characterized by degree of concreteness or abstractness. Concreteness represents little differentiation or integration of concepts; abstractness represents a high degree of differentiation and intergation (Harvey, 1966). Variations in conceptual systems control the teacher's ability to function in a highly student-centered environment where they are to teach using the learner's frame of reference and to encourage students to question and hypothesize (Hunt & Joyce, 1967).

Although each of the theorists, Harvey, Hunt, and Schroder, have currently defined conceptual levels in terms of somewhat different functional aspects, each has acknowledged the initial general description of four stages of cognitive complexity which characterize the ability of an individual to differentiate and

integrate environmental stimuli and which relate to the ability of an individual to function adaptively and efficiently in a given environment. These four stages were defined by Harvey, Hunt, and Schroder (1961) and were discussed further in Hunt (1970) and Pervin (1970).

Stage 1. Unilateral Dependence - The individual has maximally undifferentiated concepts. He or she has difficulty with ambiguity, tends to view things in terms of absolutistic or concrete concepts. There is greater dependence upon field.

Stage 2. Negative Independence - There is gross differentiation of self from the external field, but functioning is characterized by the questioning of external control and opposition. Testing of limits is common, as is avoidance of dependence.

Stage 3. Conditional Dependence and Mutuality - The individual separates him or herself from the external environment and begins to establish a mutual relationship with it. There is a high degree of sensitization to the reactions of mutuality and conditional dependence. There is an effort to question and test concepts, representing adoption of an "empirical attitude."

Stage 4. Interdependence - The individual has many concepts available to him or her and is capable of ordering, combining, and evaluating them in many different ways. The individual is capable of interdependent relations with the environment and with others in that environment. There is an integration of mutuality and autonomy.

Hanson (1975) has carefully summarized and effectively analyzed various aspects of Conceptual Systems Theory in her dissertation review (see Hanson, 1975, Chapter 2, pp. 20-59). She has also pointed out the specific directions each theorist has researched as he began to work individually: Harvey in the area of belief systems, Schroder in the area of information processing, and Hunt in the area of instructional environment. The reader is directed to her extremely complete review of Conceptual Systems Theory.

Conceptual systems characteristics were specifically related to teaching behaviors by Murphy and Brown (1970). Teachers in Stage 1 have a tendency to view the world in an overly simplistic, either-or, black-white way; believe strongly in rules and roles; and view authority as the highest good, regarding all questions as having one answer. They thus tend to discourage divergent thinking and

to reward conformity and rote learning. Stage 2 teachers are characterized by conflict between compliance and opposition, are low in self-esteem and high in alienation and cynicism, and are inconsistent and uncertain while functioning in a manner similar to Stage 1 teachers. Stage 3 teachers, with strong outward emphases on friendship and dependence on the standards of others show high affiliative needs based on mutuality and group concensus rather than rules. Their need to control others through dependency may be disguised under the desire to help others. Being more abstract in functioning than Stage 1 or 2 teachers, however, Stage 3 teachers do encourage more pupil self-expression. Stage 4 teachers, being the most abstract, open-minded, stress tolerant, and creative, regard knowledge as tentative rather than absolute and are able to consider situations from other points of view. Thus Stage 4 teachers, being cognitively complex themselves, tend to encourage more complex functioning in their students.

Harvey (1970) has researched the distribution of conceptual systems among preservice and inservice teachers in Colorado. His results are alarming in that they indicate that the person who stays within the educational framework the longest (i.e., a practicing teacher) is more likely to be a person who exibits a lower, more concrete conceptual level. See figure below.

Distributions of Conceptual Systems Types among Liberal Arts Students, Education Majors, and Practicing Teachers

Educational Position	Conceptual System 1	2	3	4
Liberal Arts Student	35%	15%	20%	7%
Undergraduate Education Majors	45%	5%	25%	5%
Practicing Teachers	55%	0%	15%	4%

*Figures do not add to 100% because of individuals who exhibit mixtures in systems.

The degree of concreteness or abstractness is the most important structural characteristic of a conceptual system (Pervin, 1970). Fedigan (1973) has characterized concrete functioning as less self-delineation, greater tendency toward extremes, and less flexibility in problem-solving. Greater concreteness tends to be accompanied by absolutism and categorical thinking, by greater belief in external causality and oughtness of rules (Harvey, Hunt, & Schroder, 1961). Concreteness disposes toward seeking a simple and highly structured environment (Harvey, Prather, White, Alter, Hoffmeister, 1966).

The more abstract person, on the other hand, is able to consider alternatives and is consequently able to integrate face . of the world in terms of their interrelatedness (Hunt, Joyce, Greenwood, Noy, Reid, & Weil, 1974; Harvey, Hunt, & Schroder, 1961). The more abstract person is likely to think more relativistically and is less inclined to revert to dualistic levels of thought (Perry, 1975). Abstract conceptual structure is associated with creativity, greater tolerance for stress, flexibility, and a wider array of coping behaviors (Harvey, Hunt, & Schroder, 1961; Hunt & Joyce, 1967). A less structured environment is usually required by the more abstract person and he/she usually prefers task with greater complexity (Hunt, Joyce, Greenwood, Noy, Reid, & Weil, 1974). The more abstract person is able to plan ahead more effectively and is better able to "read and flex," shift behavior from one type of task to another in response to student behavior (Harvey, Hunt, & Schroder, 1961; Hunt, 1975).

Hunt (1975) built upon the original conceptual systems theory (Harvey, Hunt, & Schroder, 1961) and defined conceptual level by degree of abstractness (differentiation, integration, and discrimination) as well as interpersonal maturity increasing self-responsibility). A person at a higher conceptual level is more structurally complex, more capable of responsible actions, and most important, more capable of adapting to a changing environment than is a person at a lower conceptual level (Hunt, 1975, p. 187). These studies provide additional evidence

that teachers at higher conceptual levels may be more able to function with adaptive, flexible, tolerant, and creative behavior.

The research evidence does suggest that teachers at higher conceptual levels may be able to assume multiple perspectives, utilize a wide variety of coping behaviors, employ a broad repertoire of teaching models, and, consequently, be more effective with students. Educators may consider applying these theories and principles to deliberately attempt to promote teachers' development toward higher conceptual levels and to look at different goals aiming toward student and adult moral and personal development within the educational systems.

Relationship of Ego to Moral Judgment Level. Sullivan, McCullough, and Stager (1970) provide empirical evidence for the relationship between conceptual, moral, and ego stages. Each dimension seems to yield useful and logically consistent data so that choosing a single method seems premature. Specifically, Sullivan, et al. (1970), with students 12 to 17 years old, reports overall correlations of .65 between moral and ego as measured by Kohlberg's moral judgment and Loevinger's SC test. When age was controlled for, partial correlation = .40. Separate analyses of each age group (12, 14, 17) revealed correlations which increased with age, moving from .19 (12 years) to .54 (17 years).

Lambert (1972) reports relationships between ego and moral development using a sample of 107 white, middle class, American born males and females ages 11 to 60, in elementary grades up through graduate education. The overall correlation coefficient between TPR and global rating of moral judgment was .80. When age was controlled for, the correlation decreased to .60. In an interesting statistical search for a "moral factor" in the SC ego test, Lambert computed the correlations between subjects' scores on each stem with scores on the Kohlberg moral judgment test and used a stepwise multiple regression analysis on each stem to predict moral score. Neither analysis allowed him to isolate a limited number of stems which could be called a "moral factor." Both measures of ego and moral development seem to be necessary at this time.

Summary on Adult Stages of Development

While the cognitive-developmental stage theorists differ in terminology and some details, the level of agreement among them is sufficiently strong and broadly based to provide a solid set of information that does have implications for adult development. While none postulate specific adult stages, all would consider continuing development within adulthood. A growing research base supports the notion that achieving identity is necessary for the higher principled states, and, thus, an empirical link exists between the functional views of development (Erikson, Marcia, Chickering) and the structural views (Piaget, Kohlberg, Loevinger, Harvey, Hunt, and Schroder) (Bernier, 1976). Integration and the experiences of choice, questioning, commitment, and cognitive reflection all seem to be required for the promotion of growth to higher stages of psychological and moral development (Kohlberg, 1973b). These needs are provided for by the Deliberate Psychological Education Model.

Inservice Teacher Education

Inservice teacher education programs have the potential for improving both education and the personal and professional life of the teacher. Multiple sources of data, however, refer to inservice teacher education with negative connotations, skepticism, discontent, and dissatisfaction (Joyce, Howey, & Yarger, 1976), and these reactions parallel the general flavor of earlier reviews of teacher education programs (Getzels & Jackson, 1964; Cyphert & Spaights, 1964; and Biddle & Ellena, 1964). Research findings support this point of view by being unable to evidence the transfer, endurance or stability of the effects of training over time. (Joyce, 1975; Howey, 1976). Thus, in spite of the awareness that inservice teacher education could provide an optimal time for growth to occur, no theory of the developmental growth of the inservice teacher has been constructed.

Key issues in inservice teacher education reform are relevancy and continuity: (1) to make inservice education more responsive and relevant to teachers'

professional job needs and personal role needs and (2) to promote the concept of continuous collaboration among teachers and staff, on site, within the schools, in follow-up activities inside teachers' classrooms (Joyce, Howey, & Yarger, 1976; Joyce, McNair, et al., 1976). Crucial also to the issue of relevance becomes the modelling of content and process in inservice programs: inservice staff must model not only the kinds of educational situations that teachers are expected to create in their own classrooms, but they also must model the types of relationships teachers are expected to develop and maintain with the children they teach (Joyce, Howey, & Yarger, 1976). It becomes important to systematically apply research findings to match these key issues in order to make a more effective in-service education program.

Role of the Teacher

Today what seems needed in educational systems are not "change agents" but rather teachers who are seen as highly qualified and who, themselves, experience their teaching roles more complexly as facilitators of learning (McKibbin, Weil, Joyce, 1977). As facilitators of the learning process, these teachers require specifically designed theory and training which is qualitatively different from that traditionally taught in preservice and inservice teacher education. They must be experienced with a variety of learning styles and corresponding teaching strategies which emphasize a broadening of their roles to include indirect teachers, group facilitators, supportive supervisors, and counselors within the classroom. (Summarized from Joyce & Weil's (1972) Models of Teaching in Oja (1978) pp. 17-19). The majority of teachers do not develop expertise in these areas, and need special training in order to perform these more complex roles effectively (Joyce, Howey, & Yarger, 1976; Wald, 1972). The single role of teacher as direct (i.e. lecturing, giving directions, or criticizing) is still found in 80% of classrooms over the world (Aspy, 1971; Flanders, 1970).

Research, however, indicates significant positive relationships linking high levels of indirect teaching[1] and facilitative responding skills[2] (which form the basis of the broadening teacher roles cited above) with high levels of student achievement and high levels of student interest, participation, and attitude toward the subject (Flanders, 1970; Amidon and Flanders, 1971; Aspy, 1967; Aspy & Hadlock, 1966; Aspy & Roebuck, 1972; Aspy & Roebuck, 1975; Shilling, 1976).

Transfer of Training

Although Flanders and Aspy have trained teachers to exhibit high levels of these skills, the transfer of training to the classroom has not always maintained these high levels. Similarly, Bruce Joyce and associates have trained teachers to be successful in various models of teaching so that teachers gained a repertoire of specific teaching skills. However, there too the transfer of training from the skill learning to the classroom was problematic. The teachers could perform their new repertory of skills on call, but this ability had little effect upon their more traditional didactic teacher role (Joyce, 1975).

There was an underlying implication common to these studies which, if made explicit, indicates that if the dependent variable of training was the acquisition of a repertory of skills, to be performed on call, then the training was successful; but if the dependent variable was the teaching style of the teacher, in general, then the training was not successful. At this point Joyce (1975) decided to

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[1]Flanders (1970) classifies indirect teaching as teacher talk which accepts feelings, praises or encourages, accepts or uses ideas of students, and asks questions.

[2]Wittmer and Myrick, (1974) indicate the most helpful teacher responses to encourage student learning and growth are #4, 5, and #6 in this list:

least facilitative	1.	advising and evaluating
	2.	analyzing and interpreting
	3.	reassuring and supporting
	4.	questioning: open-ended
	5.	clarifying and summarizing
most facilitative	6.	reflecting and understanding feelings

concentrate on the success possible if the dependent variable was the acquisition of a repertory of skills. It is the viewpoint of this writer, however, that the research evidence relating teacher effectiveness with more complex stages of conceptual functioning leads to the consideration of teacher Conceptual Level as the dependent variable of inservice education. This strand of psychological development, along with Ego development and Moral development, (discussed earlier in this paper) has been studied by Sullivan et al. (1970) and has been researched through the Deliberate Psychological Education Program with adolescents, college students, and a pilot group of inservice teachers. Teacher development in terms of structural changes, instead of just in terms of performance changes, is suggested as a relevant alternative in inservice education reform.

Teacher Effectiveness

The research of O. J. Harvey, David E. Hunt, and Harold Schroder provides evidence that teachers at higher conceptual levels may be more able to function with adaptive, flexible, tolerant, and creative behavior (see section on Conceptual Development earlier in this report). This research evidence does suggest that teachers at higher conceptual levels may be able to assume multiple perspectives, utilize a wide variety of coping behaviors, employ a broad repertoire of teaching models, and, consequently, be more effective with students. The Deliberate Psychological Education Program has applied these theories and principles to deliberately attempt to promote teachers' development toward higher conceptual levels and to look at different goals aiming toward student and adult moral and personal development within the educational system.

Deliberate Psychological Education: Inservice Teachers

Deliberate Psychological Education Programs are grounded in a theory base and a research base: the theory of cognitive-development as expressed by Dewey (1938), Piaget (1932), Kohlberg (1969) and Loevinger (1970), and the research base of the formative evaluation model with multiple assessments discussed by Cronbach (1963),

Scriven (1967), and related to current research programs in psychological growth by Sprinthall (1975). Thus the DPE alternative for inservice education represents a systematic approach from a theoretical and research based framework (typically lacking in teacher education programs, and consequently called for currently by educators such as Howey (1976) and Shutes (1975), and reiterated in the June, 1976, report of the National Center for Educational Statistics/National Teacher Corps Review Of Inservice Teacher Education).

In the pilot study with inservice teachers, Bernier's Deliberate Psychological Intervention squarely confronted the issues pertaining to the reality of developmental stages in adulthood and the possibility of stimulating adult growth. The objectives of the curriculum were cognitive-structural stage growth along the dimensions of ego, moral, and conceptual development. In an environment designed to involve a deliberate blend of real experience and reflection, we hypothesized that the teacher participants would assume a position of responsibility within an atmosphere of collegial relationships and consequently take the perspective of others in making value and action choices.

Using a developmental curriculum similar to the one outlined in the next section, and a pretest-posttest non-equivalent control group design, Bernier found significant differences in a correlated t-test on the Rest Defining Issues Test for the 18 experimental subjects ($p < .01$). This indicated that the experimental group increased significantly in their use of principled moral thinking. The control subjects ($n = 8$) failed to show a statistically significant shift. No significant shifts pre to post were achieved by either the experimental or control groups on the Harvey Conceptual Systems Test of the Loevinger Ego Development Test. Bernier concluded that the DPE pilot intervention was powerful enough to <u>initiate</u> cognitive structural growth, and he called for a more powerful intervention to promote stage growth in adults of a magnitude consistent across all three measures of psychological development.

Design, Methodology, and Curriculum of the Study

The main purpose of this study was to measure a Deliberate Psychological curriculum for inservice teachers and test the hypothesis that this curriculum raises (1) the teachers' level of ego, moral, and conceptual development and (2) their acquisition of facilitative counseling skills and indirect teaching skills.

Participants for this study were inservice elementary and secondary school teachers and other student support personnel (counselors, social workers) who were enrolled in classes in the College of Education in a large midwestern University, Summer 1976. The experimental subjects ($N = 37$) were enrolled in a Developmental Education workshop offered for regular graduate credits. The control subjects ($N_1 = 25$, $N_2 = 23$) were enrolled in various other education courses. The instructional staff consisted of six doctoral students and two faculty members in the Developmental Education Program.

Standardized measures of the dependent variable, personal psychological development in the stages of ego, moral, and conceptual growth, were administered to both experimental and comparison groups at the beginning of the program in June, 1976, and at the end of the program in December, 1976.

Professional/skill acquisition was measured for only the experimental group by 1) a facilitative counseling measure similar to Gazda and Carkhuff and 2) the Flanders indirect teaching analysis system. The communication skill measure was administered to the experimental group at the beginning of the summer workshop in June, the end of the summer workshop in July, and the end of the fall practicum in December. Audio tapes of classroom teaching in May, before the summer workshop, and in December, during the fall practicum, formed the measure of indirect teaching for one subgroup of experimental teachers (only the elementary teachers handed in all their required pretapes).

Evaluation of this curriculum intervention followed a pretest-posttest nonequivalent comparison group design and employed a formative model of evaluation.

The dependent variable of personal/psychological growth for both the experimental and comparison groups was measured by the Sentence Completion Test of Ego Development (Loevinger & Wessler, 1970), the Paragraph Completion Test of Conceptual level (Hunt, et al., 1973), and the Defining Issues Test of Moral Judgment Reasoning (Rest, 1974). For the experimental group only, professional development in the skills of facilitative counseling was measured by the Reflection of Feeling Scale (Thompson, 1976) (similar to the Carkhuff and Gazda empathy measures), while the skills of indirect teaching for the elementary sub-group only were measured by the Flanders Interaction Analysis (Flanders, 1970). Informal process measures of the intervention included clinical analysis of the participants' journals, assessment of the participants' course evaluations, and observation of experimental teacher's ability to implement concepts of developmental theory to their classroom curriculum designs and interactions with students.

Curriculum Objectives

General objectives of the curriculum for the adult teachers included (1) the development of more complex, differentiated, and integrated understanding of self and others, (2) increased cognitive complexity, (3) development toward principled morality, and (4) increase in knowledge of educational psychology and increased skills in communication. The program used three instructional settings: large group didactic learning, small group laboratory learning, and fall quarter practicum application. The curriculum existed in three phases:

Phase I - Building supportive interpersonal relationships within the small groups to facilitate developmental growth.

Phase II - Learning the communication skills needed for facilitative teaching, indirect teaching, and individualizing instruction in addition to the content of cognitive-developmental stage theory.

Phase III - Applying the skills and theory to the real classroom setting with significant on-going supervision.

The workshop in the summer concentrated on Phases I and II of the curriculum while Phase III, the on-going supervision of the practicum, occurred during the fall quarter of the year as teachers returned to their classrooms to try out mini-units in peer teaching, cross-age teaching, precision teaching and peer counseling based on their newly acquired skills and theory.

The summer workshop ran from 8:30 to 12:00, 4 days a week for five weeks. Each day was divided into a large group session, 8:30-10:00, and a small group session, 10:30-12:00. The large group dealt mainly in didactic learning (lectures and discussions) specifically relating principles and theories of human development (i.e., Elkind, Erikson, Loevinger, Hunt, Kohlberg, Piaget, Perry) and principles of behavioral contracting to adults' personal development, social roles, and educational practice in classrooms including individualizing instruction and mainstreaming.

Small group sessions each day focused on learning and practicing facilitative communication skills and group process skills with particular emphasis on the personal/professional identity issues of adults.

Additionally, focus was placed on transferring the theory and skills to the classrooms through the planning of three required developmental education mini-units to be implemented in the fall practicum. These were aimed to encourage teachers to see the multiple perspectives in their roles (as indirect teacher, group facilitator, supportive supervisor, and counselor within the classroom), and to experience a variety of possibilities in relating to students as well as to other adults in the educational system.

Use of journals, focused video feedback, and role of the small group leaders were all carefully specified in the curriculum design. (Contact the author for specified design and rationale for curriculum.) In addition, four focus points of developmental approaches to learning existed within all three phases of the curriculum. They were (1) seminar approach with practicum experience--the "action plus reflection" framework; (2) significant social roletaking--the ability to take the perspective of others; (3) on-going supervision; and (4) provision for support during times of disequilibrium in new learning.

THE RESULTS

The study employed three empirical measures of developmental stage, the Loevinger, the Rest, and the Hunt. Since there are no single valid measures, an overlapping assessment was employed with the three tests serving as proximate measures. The results will be presented in the following order: Loevinger, Rest, and Hunt. Each is viewed as an indicator of how each person processes or makes meaning from experience by developmental level. The Loevinger largely assesses how an individual thinks about/conceptualizes about self, the Rest, how a person processes social-justice questions, and the Hunt, how a person conceptualizes is-

sues of teaching and learning.

Adult's Ego Development

The Loevinger stage scores are transformed into a 10 point interval scale according to the scheme outlined in table 1. This procedure has been employed in a large number of research studies and permits data analysis through parametric statistics. The procedure, although a modification of classical assumptions, does not violate the basic assumption of parametric analysis of variance (Gardner, 1975).

Table 1 indicates the results of independent t-tests comparing the mean ego level score of the experimental to the comparison group on both pretest and posttests. No significant differences were found on the pretest nor the posttest scores between the two groups.

Posttest scores indicate that the Experimental Group Mean was significantly different from the Control. Since developmental theory predicts direction for change, a one-tailed test of significance was employed. The computed posttest t was 1.70 and with 53 NDF this was significant beyond the .05 level. Inspection of the mean scores, however, revealed that the source of significance was probably derived more from the decrease on the posttest by the Control than an increase by the Experimentals. In fact, the decline in posttest scoring is apparently the general expectation when employing the Loevinger with adult populations.* Thus, the control group regressed in scoring as do most adults on a pre/post basis while the experimental group essentially remained stable. This cannot be taken, however, as a major indicator of developmental growth. At best it can be considered a trend. Overall the experimental group of adult teachers remained at stage four on the Loevinger, a highly stable adult stage of development similar to Kohlberg's stage 4.

*The Loevinger Center is currently working on a new scoring system to partial out this regression effect. Thus far the new procedure is highly intuitive and somewhat suspect. See Redmore and Waldman (1975) for more details.

Table 1

LOEVINGER EGO DEVELOPMENTAL SCORES

(PRETEST, POST-TEST: EXPERIMENTAL VS CONTROL)

Variable	N	Mean	Standard Deviation	Degree Freedom	t	p
Loevinger SC-18						
Pretests:						p (two-tailed) [a]
Experimental	30	6.867	.681	53	.80	NS
Comparison	25	6.720	.678			
Post-Tests:						
Experimental	30	6.900	.662	53	1.70	p (one-tail) [b] .01< p< .05
Comparison	25	6.560	.821			

Ego level	1	2	Delta	Delta/3	3	3/4	4	4/5	5	6
Interval Value	1	2	3	4	5	6	7	8	9	10

[a] Since the pretesting is designed to assess whether or not the two groups are derived from the same population, a two-tailed test is appropriate.

[b] The post-testing is designed to assess whether the experimental group is higher in score than the control group. In testing a prediction of direction, a one-tail is appropriate.

Adults' Moral/Ethical Development

The Defining Issues Test (Rest, 1974) attempts to assess what people see as crucial moral issues in a situation by presenting subjects with a moral dilemma and a list of definitions of the major issues involved.

The DIT is based on Kohlberg's (1969) theory of six stages of moral reasoning but uses a multiple choice, rating and ranking system. It can be easily administered to groups, objectively scored, and has been researched with firm reliability and validity levels. This is in variance with Kohlberg's interview format and scoring process which has been described as psychometrically weak (Rest, 1975), too complicated and impractical for many research and educational projects (Rest, 1976), and has been severely criticized in terms of reliability and validity (Kurtines & Grief, 1974). In considering Rest's careful development and standardization of the DIT, Hogan and Bohannon (1976) comment:

> Rest has produced one of the most interesting and original contributions to the assessment of psychological substructure of moral conduct in nearly 30 years. He has moved the study of moral judgement away from its reliance on interviews and projective techniques and has begun to develop a firm, reliable psychometric base for its study. (p. 123)

The DIT is based on the assumption that people at different developmental stages perceive moral dilemmas differently and will choose different statements as the "most important" issues to be considered in making a decision about the dilemma. The DIT used in this study consisted of three dilemmas (stories). Each story has 12 statements (or issues); the subject is asked to first rate each statement on a 5-point scale from "great importance" to "no importance" and then to rank order their four most important choices. (See Rest, 1974.) Since each issue statement represents a moral judgement stage, a subject's choices of the most important issues over a number of moral dilemmas are taken as a measure of his/her grasp of different stages of moral reasoning. The P score represents the

percentage of the subject's principled thinking, stages 5A, 5B and 6 usage scores in Kohlberg's terms.

Table 2 indicates that there is no significant difference between the two groups on the DIT pretest. Both groups can be considered as being drawn from the same population of adult teachers. The table also indicates that the two groups were significantly different on posttest scores ($\bar{X}_E$ = 18.3, $\bar{X}_C$ = 14.9; t = 2.06, df = 46, p = .02), a difference favoring the experimentals.

The shift for the experimentals from 16.3 to 18.9 (or 56% to 63%) was significant beyond the P = .009 level (one tailed test). The shift for the controls did not reach statistical significance.

The results indicate that experimental teachers gained significantly pre to post in their use of principled moral thinking. The experimental teachers increased their average P score on the DIT-3 test from 56.3% to 63.1%. This compares favorably with Bernier's (1976) results with inservice teachers (N = 16) which showed an increase from 56.8% to 65.8%.

Adults' Conceptual Level

The Paragraph Completion Test (PCT)* developed by Hunt, Greenwood, Noy, and Watson (1973) was used in this study to measure subjects' conceptual levels. Originally formulated in a developmental theory of personality development (Harvey, Hunt & Schroder, 1961), Hunt defines Conceptual Level as a person characteristic indexing both cognitive complexity (differentiation, discrimination, and integration) as well as interpersonal maturity (increasing self-responsibility). A person at a higher Conceptual Level is more structurally complex, more capable of responsible actions and, most important, more capable of adapting to a changing environment than is a person at a lower Conceptual Level (Hunt, 1975, p. 187).

*Schroder uses a similar PCT (Schroder, Driver & Streufert, 1967). Though Hunt and Schroder use slightly different scoring numbers, the rules for assigning scores are similar.

Table 2

REST DIT SCORES - PRINCIPLED MORAL THOUGHT

(PRETEST POSTTEST: EXPERIMENTAL VERSUS CONTROL)

	Instrument	n	mean score raw	%	sd	df	t	p
	Rest DIT-3							
Pretest	Experimental	27	16.33	(56.3%) c	4.56	46	1.81	p(two-tail) a NS
	Comparison	21	13.43	(46.3%)	6.59			
Posttest	Experimental	27	18.296	(63.1%)	.959	46	2.06	p(one-tail) b .02
	Comparison	21	14.952	(51.5%)	1.372			

[a]A two-tailed test is appropriate here since at the most general level we wish to determine whether or not the groups can be considered as drawn from the same population at pretest.

[b]A one-tail test is appropriate here since we wish to determine whether the posttest score is higher than the pretest, i.e., we are testing a prediction of direction.

[c]to transfer from raw score to % score, divide raw score by 29. A duplicating error caused subjects to skip the 4th ranking for the Newspaper dilemma. Personal communication, 1977, Rest advised that dividing raw score by 29 instead of the usual 30 would minimally affect statistical interpretations.

The PCT uses a semi-projective format in which the subject is required to project his or her own frame of reference within the areas of (1) conflict or uncertainty ("When I am criticized," "When I am not sure," and "When someone does not agree with me,") and (2) rule structured and authority relations ("When I think about rules," "What I think about parents," and "When I am told what to do"). Respondents are given three minutes to write at least three sentences to complete each of the above six phrases.

Each of the six conceptual level stems was coded with a score of from 0 to 3. A score of 0 was assigned to a response characterized by concrete negativism, lack of differentiation, overgeneralization and preoccupation with immediate gratification of personal need. A score of 1 characterized responses containing categorical judgements (good-bad; right-wrong), overgeneralized and unqualified acceptance of a single rule, and reliance on external standards. A score of 2 was assigned to responses which began to show signs of self-delineation, expressed an awareness of alternatives, and indicated sensitivity to the respondent's own feelings. The highest, score of 3, was given to responses which demonstrated a clear indication of self-delineation and reliance on internal standards, a sense of self in context or relationship with others, and which is able to take two viewpoints into account simultaneously (Hunt, 1970; Hunt, Greenwood, Noy & Watson, 1973).

Table 3 lists the results of an independent t-test between experimental and comparison groups on the pretest and posttest mean CL scores. The results from this table indicate that the experimental and comparison groups were not significantly different in mean pretest scores. Comparison on the posttest, however,

Table 3

HUNT CONCEPTUAL LEVEL TEST

(PRETEST 'POSTTEST: EXPERIMENTALS VERSUS CONTROLS)

Instrument		n	mean score raw	%	sd	df	t	p
Hunt Paragraph Completion Test								
Pre:	Experimental	31	1.855		.290	52		p (two-tailed)[a] NS
	Comparison	23	1.696		.372			
Hunt Paragraph Completion Test								
Post:	Experimental	31	2.010		.375	52	2.29	p (one-tail)[b] .013
	Comparison	23	1.787		.322			

3 point scale

1 - Categorical judgements, stereotyped thought. Other directed, accepts single rules

2 - Self delineation, awareness of alternatives, awareness of emotions

3 - Abstract internal principles, awareness of multiple viewpoints

[a] Since the pretesting is designed to assess whether or not the two groups are derived from the same population, a two-tailed test is appropriate.

[b] The posttesting is designed to assess whether the experimental group is higher in score than the control group. In testing a prediction of direction, a one-tail test is appropriate.

revealed a statistically significant difference ($t = 2.29$, $df = 52$, $p = .013$ one tail), indicating the experimental mean CL score was significantly higher than that of the comparison group.* A correlated t-test provided further statistical evidence to support the fact that the mean conceptual level (CL) score for the experimental group increased more than the mean CL score for the comparison group. Thus, the experimentals were significantly different in gain scores ($N = 31$, $p = .005$) whereas the comparison group ($N = 23$) did not evidence significantly different pre to posttest gains.

Facilitative Counseling and Indirect Teaching

In the area of skill development a repeated measures ANOVA for the experimental group (from Time 1, the pretest; Time 2, the summer workshop posttest; to Time 3, the fall quarter follow-up posttest) indicated a significant increase ($p = .0001$) in Reflection of Feeling scores. Correlated t-tests revealed that the experimental group ($N = 32$) gained significantly ($p = .001$) in their skills over the summer training period, and this gain was maintained significantly over the fall practicum ($p = .001$). (See Table 4). This reflected a gain in communication skill from a level of accurately identifying and responding to most of the "client" feelings.

The Flanders levels of indirect teaching were analyzed pre-post for the elementary subgroup only (see table 5). The results of a correlated t-test indicated that this group of elementary teachers ($N = 10$) increased their level of indirect teaching significantly ($p < .01$). Amidon and Flanders (1971) indicate that the average teacher talks about 80% of the class time. This group started at 41.2% in-

*A limitation in making conclusions between these two groups arises from the amount of space allowed for responses on the Conceptual Level test. The pretest listed the six stems on two pages, leaving about one-third page blank for each stem while the posttest listed each stem on a different page, giving about two-thirds of a page to respond to each stem. In both cases subjects were directed to use three minutes to write "At least three sentences" in response to each stem. All responses were scored by the same Hunt trained rater in Ontario at OISE. Consequently, this writer suggests that differences between groups are the result of treatment variables, not test differences.

Table 4

REFLECTION OF FEELING SCORES
(CORRELATED T: EXPERIMENTAL SUBJECTS ONLY)
(N = 32)

Variable	N	Mean	SD	t	DF	two-tailed Probability	
Experimental							
Time 1 T_1	32	2.003	.601	-7.66	31	.000	*
Time 2 T_2	32	2.691	.482				
Time 1 T_1	32	2.003	.601	-5.75	31	.000	*
Time 3 T_3	32	2.594	.629				
Time 2 T_1	32	2.691	.482	1.29	31	.208	NS
Time 3 T_3	32	2.594	.629				

T_1: beginning of the summer workshop

T_2: end of the summer workshop

T_3: end of the fall practicum

5 point scale for responses
1 = Total lack of awareness of emotions
2 = Awareness but slight distortion of feelings
3 = Accurate identification and response to feelings
4 = goes beyond the stated content and feelings expressed - Leads
5 = goes well beyond expressed feelings - suggests major new awareness to subject

Table 5

INDIRECT TEACHING LEVELS

(CORRELATED T: ELEMENTARY SUBGROUP ONLY)

Group	Test	n	M	sd	t	two-tailed
Elementary	Pre	10	.412	.195	-3.27	$p < .01$
	Post	10	.573	.190		

Based on Flanders categories. The Indirect Ratio is computed by adding categories one through four and dividing by all seven categories.

direct teaching style and ended with 57.3% indirect teaching.

Analysis of Experimental Subgroups

Analysis of variance on the pretest scores of each subgroup E_1, E_2, and E_3 on the Loevinger Sentence Completion Test, the Rest Defining Issues Test, the Hunt Paragraph Completion Test, and the Reflection of Feelings Test indicated no significant differences between the three subgroups. Likewise, analyses of variance in the posttest scores by subgroup indicated no significant differences. Thus the three experimental subgroups were not significantly different from one another on either their pre or posttest scores.

Reactions to Small Group Experience. The small group sessions each day focused on learning and practicing facilitative communication skills and group process skills with particular emphasis upon the personal/psychological identity issues of adults.

Attitudes toward the small group experience were measured by ratings on several statements on Likert-type scales with results ranging from 5.3 to 6.0 on the scale from 1 to 7 (i.e., from "poor" to "excellent") on various aspects of the small group experience. (See Table 6). The ratings indicated that the participants felt that their groups functioned well together and that, in highly valuing the interpersonal aspects of knowing others in the group, they also felt that they had learned a good deal from one another. Their overall reaction to the small group experiences was very positive.

Small Group Leader Effectiveness. The effectiveness of the small group leader was rated between 4 and 5 on a scale from 1 (very ineffective) to 5 (very effective) across a variety of teacher characteristics. Table 7 reports that mean ratings assigned by the experimental participants as a total group.

In general, the experimental group judged their group leaders to be quite effective across all six teacher characteristics.

In addition to the objective measure discussed above, the experimental partici-

Table 6

Small Group Experience Reaction Sheet

MEAN RATING OF EXPERIMENTAL TEACHERS (N=32)

	Little			Some		A Great Deal	
In terms of subject matter, I learned...	1	2	3	4	5 X 5.3	6	7
	Little			Some		A Great Deal	
In terms of getting to know each other, I know...	1	2	3	4	5 X 5.6	6	7
	Did not Cooperate			Worked Together to Some Extent		Worked Quite Well	
My group	1	2	3	4	5	6 6.0	7
	Act the Same			Change A Little		Change A Great Deal	
If I could repeat the experience, I would...	1	2	3	4 4.0	5	6	7
	Little Value			Great Value		Vital	
I know that getting to know others in the class is of...	1	2	3	4	5	X6 5.9	7
	Poor			Good		Excellent	
My overall reaction to the experience was...	1	2	3	4	5 X 5.7	6	7

Table 7

SMALL GROUP LEADER EFFECTIVENESS

MEAN RATING BY EXPERIMENTAL TEACHERS (N=32)

The items included in this section are designed to assess the perceived effectiveness of the small group leaders. As you rate each item, keep in mind you are to give a rating from Ineffective to Very Effective. Place a number by each item corresponding to the numbers listed below:

1 - Very Ineffective
2 - Somewhat Ineffective
3 - Moderately Effective
4 - Quite Effective
5 - Very Effective

SMALL GROUP LEADERS

4.4	1. Ability to be flexible, showing tentativeness, openness, and diversity.
4.3	2. Ability to show consistency between verbal and non-verbal behavior.
4.3	3. Ability to show involvement with the group member, including directness and openness.
4.1	4. Ability to show perceptual sensitivity of overt and covert group member behavior.
4.3	5. Ability to show caring and acceptance.
4.1	6. Ability to confront effectively.

pants (N = 32) were asked to react to a number of questions about the summer workshop experience. Since this was an open ended evaluation, some questions showed a variety of different individual responses. In summarizing these responses, the writer will discuss the three or four most frequently mentioned issues under each topic, the most frequent listed first with the number of tallies it received. (See Evaluation Forms, Appendix L.)

Reactions to Small Group Experience. The participants indicated that the most significant aspect of the small group was (1) frequent counseling practice (mentioned by a third of the tallies), (2) learning to examine their own responses to other's feelings and attitudes, and (3) sharing and empathizing with others in the group and through their responses and dialogues in their journals. Having set personal goals, they felt that the small groups were significantly helpful, effective, and supportive to them in their goals (mentioned by half the tallies). In terms of their contributions to others and their goals, the participants felt good and successful in terms of sharing, reinforcing, being positive, and supportive (receiving two-thirds of the tallies).

When asked what was most difficult, one-third of the tallies of the participants indicated "revealing feelings to leaders and group members," "sharing problems," "realizing my fears of opening up," and "trying for more verbal participation," "witnessing others' pain and discomfort," and "understanding the innermost feelings of others in the group."

Compared to human relations training, the participants felt that this summer workshop was much "better," "superior," "much more positive and helpful," "more directly relevant and practical," and contained "more genuine feelings" with "more trust and caring" (the comments receiving two-thirds of the tallies).

The small group agenda was seen as enjoyable with a good balance of activities by one-half of the tallies.

Reactions to the Large Group Experience. The most outstanding feature of the large group meetings was the discussion of stages of Kohlberg, Piaget, and Erikson (mentioned one-third of the time); followed by the films; the self-examination resulting from the material; and the instructors' non-threatening concern for the individual participants. When asked to review their original aspirations about the course, and then indicate any significant shifts to new views, attitudes, and feelings, the participants indicated that the new ideas and content initiated a change in their views toward other people (mentioned one-third of the time); a broadening of their viewpoints; a greater confidence in their ability to help students with personal growth; and feeling of support for new ideas and new ways to evaluate practice, leaving them better prepared to defend these new ideas and practices.

Most difficult in the large group were the following: too much material coming at them too fast (mentioned one-fourth of the time); long lectures; not enough time to think about the material; and, specifically, the four-lecture sequence by the instructor in precision teaching and behavioral contracting. When asked to consider the balance of discussions, lectures, intellectual and emotional domains, the participants indicated a sense of overall balance (mentioned by one-fourth of the tallies), varied presentations, good films and tapes, and attention to group concerns; with specific mention of balance in the presentations by the two instructors in psychological development, contrasted with a sense of imbalance, with too much stress on the cognitive domain, in the presentations by the instructor in precision teaching.

Compared to other large group experiences in other classes, the participants indicated that this experience was unusually broad (mentioned one-third of the time), and exhibited good interaction wherein they felt they were responded to within a well-coordinated instructional atmosphere.

Participant's Journals - Final Entries

Participants engaged in journal writing over the summer workshop and fall practicum as a required part of the intervention experience. In culmination, each participant was asked to write one final journal entry to reflect on any possible changes in conceptions of their teacher role and their personal lives over the six months of the curriculum intervention. especially after their experience of implementing developmental education mini units with their students.

> "In what ways have your conceptions and feelings about your various teacher roles changed as a result of this 2-quarter workshop experience? Consider discussion of such areas as your specific teaching behaviors, attitudes toward students, other teachers, family, self..."

(Rules of anonymity of developmental test scores prevented the possibility of comparing individual teacher's journal comments to developmental stage.)

Three main issues were cited across the responses of all 31 participants; these were changes in teacher role, personal self, and feelings toward other teachers. Specific responses in these three areas are summarized and reported in the following pages. Sample excerpts from individual teachers' journal entries can be found in Oja (1978, Appendix M) listed by group and by topic. Changes in 'teacher role' was most frequently mentioned (24 out of 31 teachers), followed by changes in 'self' (mentioned by 20 out of 31 participants) with changes in 'views towards colleagues' mentioned least frequently (by 14 out of 31 participants.) Each of these three topics is discussed below.

Changes in Teacher Role. Changes in their role as teachers was mentioned by 24 out of 31 participants. In the elementary Group 1, 8 out of 10 cited teacher role change described in the following ways: becoming a person in the classroom; analyzing own teaching techniques and using that information to change; teaching communication skills to students and encouraging them to apply these skills with each other; acting as resource persons; using different goals for students aimed toward self-responsibility; and managing the class with use of reciprocity. In the all secondary Group 2, 9 out of 12 teachers mentioned changes in their teacher

role such as actively talking and listening to kids about their feelings, problems, values, and conflicts; negotiating contracts with students; risking changes from lecture format to peer and cross-age teaching; teaching communication skills to students; handling conflicts with kids and other adults by using communication skills; designing activities so kids become more self-sufficient and responsible; and soliciting help in teaching from the students themselves.

In Group 3, with six senior high, 1 junior high and 2 elementary teachers completing the course, 7 out of these 9 teachers mentioned changes in their teacher role as follows: responding to student problems by seeking out feelings; not being afraid to introduce new things in class; gaining fulfillment and satisfaction from peer teaching; making better use of listening time by listening actively to feelings of students; using logs as an additional way to learn about students as persons; using communication skills to investigate feelings in order to circumvent a fight between students; using communication skills to help get outside typical self-centered lifestyles. Many in this group, 6 of 9, however, while mentioning the above tended to expand more frequently upon the more topic or content-oriented aspects of their roles as teachers -- discussing the "importance" of the three mini-units with little mention of how they themselves might have changed in their role as teacher.

Changes in Personal Self. Changes in self was mentioned by 20 out of the 31 participants: 7 out of 10 in Group 1, 9 out of 12 in Group 2, and 4 out of 9 in Group 3. These excerpts are found in Oja (1978, Appendix M). In Group 1, consisting entirely of elementary teachers and support personnel, the comments ranged over increased confidence, personal strength, assertiveness, openness to alternatives, acceptance of self, taking responsibility for self, self-esteem, ability to make choices for self without guilt, and ability to evaluate self and teaching performance. Six of the seven of these elementary teachers mentioned increased assertiveness as part of the changes they felt important within themselves over the 6 month intervention. This is interesting because only 3 of the remaining 21 teachers (one person

in Group 2 and two persons in Group 3) mentioned changes in self which could be labeled as increased assertiveness. Also, Group 1 tended to label their changes very specifically whereas both Group 2 and Group 3 expressed more general 'changes in self' described as follows.

The 7 out of the 9 Group 2 comments on changes in self were in the areas of increased communication skills used with others including family; zeroing in on feelings; being more considerate and caring while less self-centered; more confidence in one's ability to apply group process skills in everyday life; accepting both support and criticism from others; and respecting people even when very different from self. Two additional teachers mentioned subtle changes in teacher role which were more oriented toward changes in self, thus making 9 out of 12 teachers in Group 2 mentioning changes in self.

Comparing the focus of Group 1 and Group 2 is interesting. The majority (6 of 9) in Group 2 (all secondary teachers or support personnel) mentioned changes in self centering about increased use of communications skills with others i.e. greater ability to listen and understand thoughts and feelings of others; while the majority of the elementary teachers in Group 1 had mentioned greater assertiveness skills i.e. greater ability to speak for self.

Of the 4 out of 9 Group 3 teachers who expressed changes in self, 2 mentioned greater assertiveness skills, 1 mentioned use of goal-setting skills, and 1 mentioned a perception that inner feelings which this person rarely shared seemed to be expressed by others in the group and thus gave a feeling of support.

Views Towards Colleagues. In the final of the three areas, feelings of not being isolated and unique were frequently mentioned as teachers expressed their changes in 'perceptions of their colleagues'. In all, 14 out of 31 teachers mentioned changes in their perceptions of their colleagues: 5 out of 10 in Group 1, 8 out of 12 in Group 2, and only 1 out of 9 in Group 3.

In Group 1 half of the group mentioned changed views of colleagues. Two persons

wrote comments describing how they discovered that their concerns were not unique and that there did exist a base of commonness within colleagues who really did have similar frustrations and feelings of inadequacy. These two also reflected on the need for support among colleagues; and this concern for support was shared by a third person. A fourth person mentioned the realization that personal problems can affect colleagues' professional lives; and a fifth person mentioned the awareness of the need for increased communication with peers and the ability to recognize miscommunication. This last person's views were also shared by one of the previous four people in the group who made comments on changed views of colleagues. The remaining 5 people in Group 1 did not mention changes in their views toward colleagues.

In Group 2, however, two-thirds of the teachers mentioned changed views of colleagues. Of these 8 teachers, half mentioned: greater understanding of colleagues in different fields; breaking down of imaginary barriers that seem to exist between people; sympathizing with the struggles each person has in trying to do their job; and opening up to fellow teachers with problems and getting closer to colleagues. One mentioned the importance of teaming and being able to express feelings assertively to other staff. Two others mentioned practicing listening carefully to colleagues and the importance of this process; and the eighth person mentioned the need for continued support from colleagues as motivation to keep using the skills and not fall back into easier, more secure content methods of communicating.

The emphasis in Group 2's better understanding of colleagues who were originally perceived as different from themselves theoretically fits well with their stated emphases on 'changes in self' which were geared toward increased abilities to listen for and empathize with the feelings of others. Similarly, theory may help explain Group 1's major 'change in self' listed as assertiveness and consequently little mention of changes in their views of colleagues. Group 1 concentrated more on individual goals of increased assertiveness and self-confidence and used this as an immediate common ground to cut down imaginary barriers between them. In so doing

the need for support between people showed up in Group 1 as the focus of their 'views towards colleagues'.

Only 1 of the 9 teachers in Group 3 mentioned changed views towards other colleagues and this comment referred to the importance of cooperation in team-teaching. The non-mention of changed views of colleagues by Group 3 is significant and reflects the difficulties Group 3 encountered throughout the intervention period. Group 3's journal entries over the 6-month intervention typically were content oriented with some mention of self or feelings unless to comment negatively on group members' or leader's behaviors. Fulfilling the requirements of the course (the 3-mini-units) were the major concern for the majority of this group. The teachers who were genuinely concerned with personal growth and use of communication skills to more effectively deal with students and colleagues were at times outnumbered or outvoiced and expressed feelings of isolation in this group. Group interactions were also at times split into factions (as described in this Oja, 1978, Chapter 5, Section on Differences between Groups: Summer Workshop p. 183).

By contrast, the journal entries of Group 1 members, on the average, reflected the changes in self and views towards students, family, and colleagues which their final journal entries exhibited above. Similarly the journal entries of Group 2 teachers over the 6-month intervention generally covered the areas of concern about group process and the learning of communications skills which as these secondary teacher's stated, were initially artificial and difficult to learn but proved significant in the sense of really getting to know others in the group (their similar problems and frustrations as teachers and as persons) in a way which cut across the imaginary barriers caused by traditional subject matter lines in their secondary schools. Thus Group 2's journal entries' also, were similar to the areas in which they expressed their final journal comments.

Analysis of individual teacher's journal entries compared to their stage of development was impossible in this study due to the negotiated contract calling for

strict anonymity of test scores for the teachers who participated.

Analysis of individual teacher's test scores as compared to their journal entries would appear a next step for further research. Information from such analysis could add much to the theory of adult developmental stages and inservice teacher education programs. For more information at the current time, the reader is encouraged to seek out an ethnographic case-study approach to teacher behavior as related to developmental stage by Carol Witherell (University of Minnesota Dissertation, 1978). The subjects for her study were certain members from Group 1 of this intervention study for which she was a co-leader. Her case-study description adds a balance to the large group empirical data collected in the current study.

On an overall basis, then, the results indicated that the inservice teachers improved their professional skills in the area of facilitative communications and their personal psychological development in areas of moral judgment reasoning and conceptual complexity. This deliberate psychological education approach was successful in stimulating cognitive-structural growth in two of three dimensions, moral and conceptual growth. Ego development remained stable in this study.

Limitations of the Study

Limitations of this study vary across the following areas: (1) use of a non-equivalent comparison group design; (2) use of proximate measures of developmental growth, and (3) effects of teaching developmental theory.

Random assignment of subjects to experimental and control groups was not possible, and thus necessitated the use of Campbell and Stanley's Non-Equivalent Control Group Design #10. Design 10 is "recognized as well worth using...when randomization is impossible" and "the more similar the experimental and control groups are in their recruitment, and the more this similarity is confirmed by scores on the pretest, the more effective this control becomes" (Campbell & Stanley, 1963, pp. 47-48). Design 10 reasonably controls for the main effect of history, maturation, testing, and

instrumentation. The main threats to internal validity are (1) selection-maturation interaction process of the experimental group and (2) regression. In the first, gains for the experimental group could be explained by factors in experimental group selection which account for differences in experimental and control groups to such an extent that subjects in the experimental group were more ready to change or had a faster rate of maturation than those in the control group. This interaction may even be present when groups have identical pretest scores. In the second threat, self-selection of subjects may result in unequal pretest scores for experimental and control groups and thus regression becomes a major internal validity problem.

In this study participants were self-selected into (1) the "developmental education workshop" as opposed to other education courses and (2) into a "comparison group for a study on inservice teachers." This may have affected results. Inspection of variables such as sex, age, years of experience, and grade taught revealed that the experimental group (N = 37) was more similar to Control* Group II (N = 23) in mean age and mean years of experience, with both of these groups slightly but not significantly older and more experienced than Control Group I (N = 25). In addition, the experimental group was more evenly balanced in terms of male and female than either of the control groups and represented a proportion of elementary to secondary teachers more similar to Control Group I than to Control Group II. The slight variations may be a limitation. Analysis of mean pretest scores, however, indicated no significant differences between the experimental and comparison groups on any of the measures of the dependent variable (Loevinger, Hunt, or Rest tests).

A possible limitation may have resulted from differential testing conditions. First, the experimental group took the pre and posttests in class, while the comparison group took the pre and posttests at home. Second, on the Hunt test only, all

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*While each experimental subject completed all three formal measures, the control group was divided into 2 parts: (1) Control I took the Loevinger test while (2) Control II took the Hunt and Rest tests. Dividing the test in this way was meant to encourage greater percentage of returns from the control group.

respondents were given about 1/3 more of a 8½X11" page of paper in which to respond on the posttest. The same instructions, however, were given for each test. "Write at least 3 sentences for each stem, taking about 3 minutes per stem;" and all tests in this study were scored by the same Hunt trained rater. Although this writer suggests that posttest differences between groups are the result of treatment variables, not test differences, this does form a limitation to the results of the study.

A second limitation of this study concerns the rudimentary, experimental nature of the available instruments of cognitive-structural growth. This study employed three empirical measures of developmental stage, the Loevinger, the Rest, and the Hunt. Since there are no single valid measures, an overlapping assessment was employed with the three tests serving as proximate measures.

In addition, this study used an 18-item Loevinger as opposed to the typical 36-item test based on the following rationale: (1) Bernier's pilot study with adults (1976) found substantial negative reactions to the use of the 36-item sentence completion test in combination with the other two developmental tests and also (2) Redmore and Waldman (1975) and Redmore (1975) had reported evidence for sensitivity of the scores to demand characteristics and external testing factors such as motivational set and tedium.

Use of the 18-item test presented a possible limitation of this study. Pretest means for the subjects in this study clustered just below Stage I-4 and the mode was I-4, which is higher than the average ego transitional stage I-3/4 found by Bernier with a group of 18 adult inservice teachers. However, Redmore and Waldman (1975) indicate that for an adult group a typical distribution would be 90% of ego scores at I-3/4 or I-4.

Use of an 18-item test may present a limitation in comparing results of this study with others and requires further research. The o-give rules were designed for the scoring of a 36-item test, and use with an 18-item sentence completion test may not be reliable at extreme ego levels, particularly Δ and $\Delta/3$. (See Oja, 1978,

Appendix I for further discussion.) Although only 2 of 57 subjects in this study exhibited $\Delta/3$ scores, the question of reliability of scoring the 18-item test by use of previously defined o-give rules requires further study.

A third limitation of this study concerns the effects of teaching developmental theory to the experimental teachers. The large group session in the summer workshop was designed so that the participants would learn the main aspects of ego, moral and conceptual developmental theory, and be able to apply the theory in their classrooms in the form of mini-units designed to promote the personal development of their students. Learning the theory may thus form a limitation of this study when considering the pre-post ego, moral, and developmental test results. However, the teachers were not taught to score the tests, nor were pages from the tests used in class lectures or discussions. This question needs to be researched further.

Conclusions and Implications

The conclusions and implications of this study are significant for inservice teacher education programs to promote both professional and personal development.

The study suggests that a three-phase curriculum for adult inservice teachers which deliberately focuses on (1) significant social roletaking in a (2) seminar approach with practicum experience with (3) significant on-going supervision and which systematically provides for (4) support during times of disequilibrium in new learning can promote both professional skill acquisition in facilitative and indirect teaching and psychological stage growth in conceptual complexity and principled morality. Teachers at more complex developmental stages are able to see the multiple perspectives in their roles (to include indirect teacher, group facilitator, supportive supervisor, and counselor within the classroom) and to experience a variety of possibilities in relating to students as well as to other adults in the educational system. Being at more complex developmental levels themselves, they are more able to encourage such developmental growth in their students.

This curriculum intervention, however, was unable to promote adult psychological stage development across all three dimensions of ego, moral, and conceptual growth. Although this intervention was successful in promoting psychological stage growth in conceptual complexity and principled moral/ethical reasoning, it was unable to promote increased levels of ego maturity. Even though this intervention had attempted to be "more powerful" in the sense of promoting principled autonomy and the assertion of one's individuality, it was unable to encourage ego development out of the fairly stable, rigid, achievement oriented, conscientious ego levels (I-3/4, I-4) toward the more flexible, interpersonally oriented, autonomous ego stages (I-4/5, I-5). The shift from a traditional teacher role to a "developmental education" role within the classroom seems not to have been powerful enough.

What may be called for to promote increased levels of ego maturity to I-4/5 and I-5 are even more intensive, distinct role shifts out of the familiar classroom to major positions of leadership and responsibility in educational programs where these teachers would have significant autonomy and responsibility for control of their own destiny.* For example, groups of teachers might volunteer to develop, implement, and evaluate new alternative programs within schools. Such programs would enable teachers to experience the roles of program developer, administrator, director, supervisor, and evaluator as well as a variety of different teaching roles to fit the new situations. In addition, teachers could experience a variety of possibilities in relating to students and other teachers and school staff.

Of course, the needs for (1) support during periods of disequilibrium in experiencing these new roles, (2) times for structured reflection to make sense of the new

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*The important and rather ominous fact here is that in promoting people's growth to the autonomous stages, one is asking them to act at odds with the majority of society; and one must consider the fact of functional regression (Kohlberg, 1973) in which one is forced at times to behave in a manner different from his/her principled autonomous stage (I-5) characteristics in order to survive. (See Oja, 1978, Appendix K for further description).

activities, and (3) available on-site supervision when needed remain important focus points to be deliberately and systematically provided for.

A third conclusion with implications for promoting the personal and professional development of inservice teachers results from questions regarding differential elementary/secondary effects of this study. Although supported by current studies (Mann, 1977), differences in elementary and secondary teacher groups need to be further researched. This study found no significant differences in psychological levels or in initial acquisition of facilitative teaching skills; however, the summaries of the experiences of the elementary and secondary teacher subgroups through journal writing suggested different priorities in the processes of the curriculum.

This study systematically applied a theoretical model based on research studies. As such, results can be further studied to build upon this model. The need for such systematic analysis based on theory and research findings has been called for again and again by current educators.

There remains a need for teacher educators to be knowledgeable and experienced in both the theory and practice of cognitive-developmental constructs.

Suggestions for Further Research

Based on the findings of this study, the following suggestions for further research are recommended.

(1) There is a need to replicate the study with larger, randomized experimental and control groups in order to validate the results of the present study.

(2) Additional follow-up research is needed to determine the long-term effects of the intervention.

(3) Further research is needed to refine developmental theory as applied to practice so that matching the curriculum to various stages of adult development can be established.

(4) Research is needed on the 18-item Loevinger test to determine correlations with the original 36-item test and possible need for revision of o-give rules for

scoring.

(5) Further research is needed to determine possible differential effects between elementary teachers and secondary teachers and to explain the differences in terms of cognitive-developmental constructs.

(6) Additional research is needed to provide guidelines that link instructional interventions to cognitive-developmental theory.

(7) There is a need to establish systematic guidelines for developmental assessment of students based on analysis of journals, video tapes, and other behavioral or unobtrusive measures.

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